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BACKGROUND OF THE INVENTION

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1. Field of the Invention

On page 1, between the first and second full paragraphs, please insert the following heading:

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2. Discussion of the Background Information

Please replace the bridging paragraph on pages 1 and 2 with the following paragraph:

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Another known embodiment for such devices with a screen is known from the technology of electronic computers, so-called PC's. Here, an arrow can be directed onto a field on the screen by a so-called mouse where, e.g., a value can be selected from a given selection of values. Or, originating from a given value, the next given value can be selected by an impulse from the mouse. Such an embodiment can be configured and controlled remotely, but it is comparatively slow in its operation. The lack of a directly acting entering knob leads to an awkward operation. The simultaneous operation of several entering devices is impossible.

Please replace the first full paragraph on page 3 with the following heading and paragraph:

SUMMARY OF THE INVENTION

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Therefore, the present invention provides a device of the above-mentioned type which

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cont allows a secure, i.e., reliable and confusion-free, but also quick feedback about values, which can be entered in an ergonomically advantageous manner by means of a manual entry element and provides a constructive design that requires little space and can easily be constructed.

After the first full paragraph on page 4, please insert the following new paragraphs and heading:

a5 The present invention is directed to a device for setting values for processing of audio signals. The device includes a signal processor, at least two elements structured and arranged for at least one of manually entering and adjusting the values, a carrier for the at least two elements, and a screen for displaying the at least one of entered and adjusted values, the screen including at least two fields. The at least two elements and the carrier are located, relative to a viewing direction of the screen, in front of the screen. A computer is coupled to the at least two elements via connections in front of the screen, and the computer is structured and arranged to acquire the at least one of entered and adjusted values and to display the acquired value on at least one of the at least two fields of the screen. The computer is also coupled to the signal processor for the processing of audio signals and structured and arranged to transmit control commands to the signal processor for processing the audio signals according to the at least one of the manually entered and adjusted values established by the at least two elements.

In accordance with a feature of the invention, set values of the at least one of the

manually entered and adjusted values depend upon a position of the at least two elements.

According to another feature of the present invention, the carrier includes transparent regions assigned to the at least two elements.

Further, the computer determines a configuration for the processing of the audio signals in the signal processor.

The device of the instant invention also provides a device for mounting electronic components positioned between the carrier and the screen for mounting electronic components. Further, the device for mounting electronic components is positioned on the carrier.

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In accordance with still another feature of the invention, the at least two elements include at least one shaft encoder. Alternatively, or additionally, the at least two elements include at least one linearly adjustable transmitter.

Moreover, the computer is structured and arranged to determine a configuration of the device by detecting positions of the at least two elements.

The device according to present invention further includes additional elements which are different from the at least two elements are associated with the screen.

Further, the computer is structured and arranged to acquire states of the at least two elements via signals in the at least two fields of the screen and to display these states on the screen. The acquired states include signal paths, lever positions, filters, dynamic changing processors, size of signals, position and variation of the position of the at least two elements.

In accordance with a further feature of the invention, at least one of the at least two elements includes an operating element structured and arranged for configuring an audio mixer.

According to still another feature of the invention, at least one of the at least two elements includes an operating element structured and arranged for setting parameters for the processing of the audio signals.

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The present invention is directed to an audio signal processing apparatus that includes an operating surface having at least two operating elements structured and arranged to set values related to at least one of a configuration for processing audio signals and parameters for the processing of the audio signals. At least one screen is structured and arranged to display the set values of the at least two operating elements, and a computer, coupled to the at least two operating elements and to the at least one screen, is structured and arranged to acquire the set values and transmit the set values to the at least one screen for display. A signal processor is coupled to the computer, such that the computer transmits the set values to the signal processor to adjust the processing of the audio signals by the signal processor.

According to a feature of the present invention, an algorithm library is coupled to the computer and to the signal processor.

In another feature according to the instant invention, at least one of the operating elements is structured and arranged to define a configuration for the processing of the audio signals. Further, at least one other of the operating elements is structured and arranged to

adjust a value of at least one selected parameter without changing the configuration.

Moreover, the apparatus further includes signal paths, positionable levers, filters, modifying processors, and the computer being structured and arranged to acquire data related to states of the signal paths, lever positions, states of the filters, dynamics of the modifying processors, amplitudes of the audio signals, and current positions of the at least two operating elements, and to transmit this data to the at least one screen for display.

In accordance with yet another feature of the present invention, a graphic computer is arranged to couple the computer to the at least one screen.

BRIEF DESCRIPTION OF THE DRAWINGS

Before the last full paragraph on page 4, please insert the following heading:

DETAILED DESCRIPTION OF THE PRESENT INVENTION

Please replace the last full paragraph on page 6 with the following paragraph:

Fig. 5 shows a view of a device according to the invention viewed in the direction towards a screen 34 with regions 35', 36', 37', etc. for displaying adjusted values and rotating knobs 35, 36, 37, etc. being elements for entering values which are assigned to a carrier 42. In addition to the mentioned entry elements, other entry elements, known per se, 38, 39 of a different type can be provided on the same screen, operating with the "touch screen" principle or being activated by a mouse. In general, the carrier 42 can be embodied transparently so that the screen 34, positioned therebehind, is visible in all parts not covered by the rotating knobs 35, 36, 37. However, additional regions 40, 41 of the carrier 42 may

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cont be covered by strip conductors, e.g., which are positioned above or below the carrier 42 or are provided as foils or are embodied as thin or thick layers. In these additional regions 40; 41 that may cover the screen in a web-like fashion, connecting all rotating knobs, the screen 34 is covered and therefore not visible.

Please replace the bridging paragraph on pages 7 and 8 with the following paragraph:

a8 Fig. 7 shows a block wiring diagram of the device according to the invention, here, the conditions for application in an audio mixer are taken into close consideration, by way of example. An operating surface 53 should be provided with a variety of adjustment elements and display elements such as dials, lamps, etc. as customary in such audio mixers. This operating surface includes a carrier 54 for operating elements 55 which serve the configuration of the audio mixer, an operating element 56 which serves to influence parameters important for the processing of audio signals, and one or more screens 57 serving to display values, dials, functions, etc. The graphic computer 58 is connected to the screen as well. A computer 62 is connected to the operating surface 53 via one data bus 59, 60, and 61 each. Here, the data bus 59 transmits data or commands relating to the configuration of the audio mixer or its changes from the operating elements 55 to the computer 62. The data bus 60 provides the computer 62 with new values from the operating elements 56 concerning the parameters for processing the audio signals or the algorithms used. The data bus 61 transmits data relating to the present state of the audio mixer and the audio signals from the

ad cont computer 62 to the graphic computer 58 and, thus, to the screen 57. The computer 62 is also connected to a signal processor 64 via a data bus 63 and a bus 71, which processor modifies, mixes, etc. the primary audio signals. Thus, it is provided with several inputs 65 and outputs 66 for audio signals. The signal processor 64 comprises the primary core of an audio mixer, e.g., operating digitally and thus known per se and not shown here. An algorithm library 67 is assigned to the signal processor 64, having saved all algorithms used in the processing of the signals from the entries 65. This library is connected to the signal processor 64 via a bus 69 and to the computer 62 via a bus 68.

Please replace the bridging paragraph on pages 8 and 9 with the following paragraph:

a⁹ In an audio mixer of a known type, the operating surface 53 is connected directly to the process computer 64 via suitable devices so that the operating elements 55, 56 can directly influence the processing of the signals for the outputs 66. In order to create additional possibilities according to the invention for operating such an audio mixer, a computer 62 is connected between the operating surface 53 and the process computer 64 which protocols the state, i.e., all settings of the audio mixer and the signals pertaining thereto. When the configuration of the switch board is changed by the operating elements 55, it occurs by corresponding data using the data bus 59 to cause the computer 62, on the one hand, to select new algorithms via the bus 68 from the algorithm library 67 and to put them out to the signal processor 64 and, on the other hand, to direct the graphic computer 58

via the data bus 61 to adjust the displays, dials etc. on the screen 57 to the new configuration.

The term configuration defines the entire arrangement provided for the processing of the audio signals. It can be represented in a block wiring diagram, for instance, which lists all processes, such as increases, additions of signals, filters, lever changes, etc. Such a block wiring diagram, being precisely equivalent to a configuration, can be modified by changes of the configuration so that a different block wiring diagram is valid for the processing, etc.

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If the operating elements 56 are activated, however, the configuration (the block wiring diagram) remains unchanged and only the values of the parameters in the selected parameters are changed, transmitted by way of the bus 71 to the signal processor 64 and are displayed on the screen 57 via the graphic computer 58 as well. This way, such values can be modified as depicted, e.g., in Fig. 6. Assuming the rotating knob 70 serves to provide a filter with a frequency limit, this limit is modified by rotating the rotating knob 70 and its values are displayed in 47. Additionally, it is discernible which channel was effected by this modification, etc.

Please replace the last paragraph on page 9 with the following paragraph:

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The operating elements 55 represent devices for defining the signal flux in the audio channels by selecting the algorithms. In the computer 62, stored program parts define means for determining the assignment of operating elements, for instance, in the meaning that a line or column of rotating knobs on the audio mixer serves to adjust equal parameters, with other parameters being influenced by elements of other lines or columns. This can also mean that